



Expression of Interest—Rural Trials  
Docket No. 10-90  
Coles-Moultrie Electric Cooperative

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### **Background**

Coles-Moultrie Electric Cooperative (CMEC) was formed in 1938 in order to bring affordable electric service to its member-owners in unserved rural areas in Southeast Central Illinois. Today CMEC operates as a 501 (c)12 not-for-profit cooperative providing electrical service to approximately 9,575 members over 1,992 miles of electric lines (at a density of 4.81 consumers per mile) in Coles, Moultrie, Douglas, Cumberland, Shelby, Clark, Edgar and Piatt counties in Illinois. Such members include 8,521 residential, 1,013 commercial, 7 large commercial and 34 public authority accounts. Commercial accounts include the local hospital, physician offices, a community college, an elementary school, grain and agricultural facilities.

In 2012, CMEC began a 2-year process of building infrastructure for a voice radio system and smart meter system with a backhaul capable of carrying wireless broadband internet service to unserved or underserved areas within the general service area of the cooperative in order to provide affordable broadband service to both members and non-members.

### **Geographic Territory**

CMEC'S primary geographic footprint relates directly to our electric distribution service area, as defined by the Illinois Electric Supplier Act of 1965, and includes all of Coles and Moultrie counties and portions of six surrounding counties. Our membership total of 9,575 connected accounts across our 8-county service area represents approximately 5.5 % of the total combined population in these counties. Of the 9,575 connected accounts, 8,521 are classified as residential accounts, or approximately 89%.

The following chart of demographic information illustrates our particular challenges and highlights the need for economic and social improvement especially in our rural environment (Source: [www.ides.illinois.gov](http://www.ides.illinois.gov)). High-speed broadband internet service is a necessity to help us transition from a declining economy to a more stable, vibrant, and growing community.

### UNEMPLOYMENT RATES

<u>CLARK</u>		<u>COLES</u>		<u>CUMBERLAND</u>		<u>DOUGLAS</u>		<u>EDGAR</u>		<u>MOULTRIE</u>		<u>PIATT</u>		<u>SHELBY</u>	
Current	Annual	Current	Annual	Current	Annual	Current	Annual	Current	Annual	Current	Annual	Current	Annual	Current	Annual
12.6%	10.0%	9.8%	8.9%	12.3%	9.4%	8.5%	7.4%	10.8%	8.9%	8.7%	7.3%	960.0%	7.7%	11.3%	9.1%

### POPULATION (2012 ESTIMATES)

16,209	53,655	10,968	19,853	18,191	14,933	16,504	22,195
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### POPULATION (% CHANGE 2010-2012)

-0.8%	-0.4%	-0.7%	-0.6%	-2.1%	+6%	-1.3%	-0.7%
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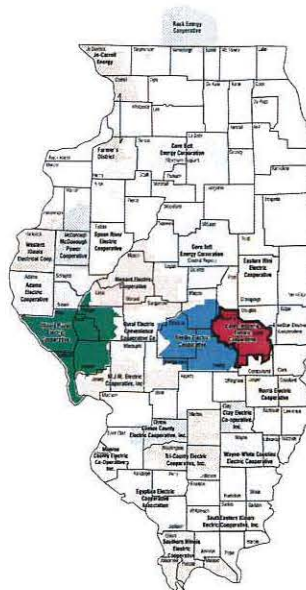
### PER CAPITA INCOME

\$24,652	\$22,262	\$22,292	\$23,870	\$23,724	\$23,985	\$28,930	\$23,233
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### PERCENT BELOW POVERTY LEVEL

11.5%	22.0%	13.4%	10.1%	15.7%	10.7%	6.3%	10.1%
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CMEC represents a smaller footprint when compared to the overall combined Broadband Cooperative Solution installed across the central part of Illinois. Our wholesale power supplier, Prairie Power, Inc., serves ten electric Cooperatives covering 37 counties across the heart of Illinois. Our broadband network includes area providers Shelby Energy and Illinois Rural Electric Cooperative serving a combined 20,000 members across 19 counties. We included this information to illustrate how committed the electric Cooperatives have been to the delivery of broadband services to an underserved market for over 8 years.



### **List of Anchor Institutions**

- *Schools* – Arcola, Arthur, Bethany, Casey, Charleston, Mattoon, Neoga, Oakland, Sullivan, Toledo, Windsor
- *Libraries* – Arcola, Arthur, Bethany, Casey, Charleston, Lovington, Mattoon, Neoga, Oakland, Sullivan, Toledo, Westfield, Windsor
- *Hospitals/Medical Facilities* – Sarah Bush Lincoln Health Center, Mattoon, IL. Carle Clinic, Mattoon, IL. Carle Medical Centers, Mattoon, IL. SBL Walk- In Clinic, Mattoon, IL DMH Medical Clinic, Sullivan, IL. Fields-Wright Medical Facility Inc. Sullivan, IL.
- *Government* – Township Facilities, County Offices, Village Halls
- *College/ Universities*- Lake Land Community College, Eastern Illinois University, Kluthe Center, Effingham, IL.

### **Proposed Technology**

CMEC has incorporated best in class design capabilities and future vision for bandwidth growth and speed, as well as maintaining a low latency network with a high level of reliability as part of our Integrated Communication Network.

The Wide Area Microwave Network at CMEC was designed to support mission critical data such as AMI, SCADA, Distribution Automation, and Land Mobile Radio traffic. The Network was designed for these various applications as well as to support rural Broadband services because of our large underserved customer base.

Our “RF” Backbone is scalable to Gigabit speeds with minor hardware upgrades as our demand for bandwidth continues to grow.

Our plans to incorporate Fiber into our existing “RF” Network will meet our demands for Bandwidth utilizing the existing ICN Fiber Network available to us in conjunction with one of our anchor tenants (Lake Land Community College). This collaborative effort will open up new access to needed blocks of I.P. addresses, as well as enhance the data communication requirements for the College.

In our most underserved areas we plan to add “Micro Cell RF Technology” with a FTTH last mile integration. Without supplemental funding, this deployment would be delayed indefinitely based on current financial modeling.

CMEC’s philosophy will be to expand and provide Broadband solutions and communications while adhering to our mission and our financial responsibilities as a member-owned Cooperative.

- CMEC Back Bone 11 GHz licensed Exalt 100 Mb full duplex upgradeable to 360 Mb through software and hardware keys designed for 99.999% reliability.
- CMEC AMI network (5.25 – 5.85 GHz) W.A.N Meshed 14 channel network L.A.N at (2.4 – 2.483) Trilliant System Interfaced via VLAN to 11GHz Back Bone.



- CMEC Broadband network 3.65 GHz WiMax Purewave 20 Mb per station Micro Site last mile solution (5.2-5.3-5.4-5.8) unlicensed Proxim with ability to go up to 100 Mb and deliver 25 Mb at the consumer CPE or be the last mile node for FTTH.
- P.O.P Consolidated Communications 20 Mb Metro-E copper can be upgraded to 40 Mb. Plans are in development for a connection at the ICN fiber P.O.P at 1 Gb upgradeable to 10 Gb.
- CMEC S.C.A.D.A. 900 MHz MAS
- CMEC Load Management 154.46375 V.H.F
- CMEC Voice Radio Digital 450 MHz

### **State and/or Local or Tribal Government Participation in and/or Support for Project**

CMEC's current position has not included any State, Local or Tribal Governmental financial support or funding. However as we grow and increase our subscriber network and meet the challenges of high-speed reliable broadband communications with additional services such as telephone and HD video, we would remain open to viable partnership opportunities. Our substantial network of permitted access to "Rights of Way" would make for a compelling arrangement with an ETC or Private WISP business. Providing these services to our rural underserved areas within our territorial boundaries at economical levels are our primary goals. We are committed to bringing broadband communications to our membership in the same context as reliable electric service was brought to the rural underserved areas during the early days of the Rural Electrification movement in the 1930's and 1940's.

### **Existing Providers**

CMEC has identified, via the "Broadband Illinois" website, other broadband service providers across our 8 county service area. These providers do not provide consistent comprehensive wide ranging coverage and through varying degrees, do not meet basic expectations of the consumer in regards to service, speed, and data rates. To the best of our ability these companies listed below have promoted their broadband solution within our 8 county core geographic area. Most have concentrated their coverage to the towns, cities, and low cost-to-serve locations.

These service providers include: AT&T, AG Prospects, Barbeck Communications Group Inc., Cellular One, Cequel Communications, Comcast Communications, Cumberland Internet, ECIC Wireless & Midwest First Tele Communications, Fairpoint Communications, Frontier Communications, Hofnet Communications, Hughes Network Systems,LLC., Illinois Consolidated Communications Telephone Company, Joink LLC, Moultrie Independent Telephone Company, Montrose Mutual Telephone Company, Mediacom Community Corporation, Now Wireless LLC., One Eleven Internet Service , Prairie iNet, T Mobile USA,INC., Tele Communications Management LLC. Verizon Communications, and ViaSat.

### **Project Timeline**

CMEC has been in an aggressive, self-funded build out phase for the past two years. During this time we have built a complete "Communication Infrastructure" for digital voice communications, AMI metering

and real-time customer energy information, and high-speed broadband internet access. As of January 2, 2014 we began offering broadband services after testing our system capabilities through strategic Alpha and Beta sites. We are experiencing close to a 50% deployable service rate based on our current network coverage. Our request for capital would accelerate our ability to provide these needed services to our members over an additional 12 months and enhance our ability to serve our rural areas by increasing our subscriber uptake to an estimated 90 %.

### **Scalability**

CMEC initial plans for our broadband solution leveraged our AMI and digital voice construction plans by efficiently utilizing labor for installation, engineering services, and field deployment. We have completed our initial system build out as part of the network needed to support our total technology solution. Our initial Alpha and Beta test sites met all of our objectives from a functional stand point. Our Broadband RF system was engineered in the 3.65 GHz spectrum range to maximize our capabilities and minimizing true line-of-sight requirements. We are currently providing up to the 4-1 data rates with unlimited bandwidth capacity. Our equipment is scalable to meet our penetration goals and subscriber additions for the next six months. We must add significant equipment and infrastructure as a result of our growth and the ever increasing needs of our consumers. We will add high-capacity Micro sites in the 5.8 GHz range for areas of concentration that will scale up to 100 MHz with 25 MHz delivered through consumer CPE equipment per site. Our plans and needs for capital include new P.O.P sites that are fiber capable up to 10 GHz. Our ability to meet the data challenges as we add more subscribers will be the availability of funds from supported programs outside of the Cooperative's general funds. We are working closely with our local community college to find joint solutions for high-speed broadband communication while maintaining our financial objectives.

### **Total Utility Investment**

**\$1,547,000**

### **One Time Capital Infrastructure Investment Needed**

**\$6,187,400**

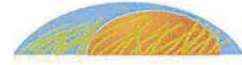
### **Total Project Cost**

**\$7,734,400**



A Wholly Owned Subsidiary of Coles-Moultrie Electric Cooperative

East Central Illinois Development Corp.  
1204 Network Centre  
Effingham, IL 62401



[www.ecidc.com](http://www.ecidc.com) Ph. 217.540.3517

*ECIDC: Fostering Regional Economic Development Since 1984*

February 5, 2014

To Whom It May Concern,

On behalf of the East Central Illinois Development Corporation (ECIDC), I support the wireless broadband internet program conducted by Coles-Moultrie Electric Cooperative to bring affordable high speed internet service to unserved or underserved areas within the counties of Coles, Moultrie, Cumberland, Douglas, Clark, Edgar Piatt and Shelby in central Illinois.

Access to affordable high speed internet service is a critical need for students to be able to download information and assignments, or otherwise have the same opportunities for education as their peers who live in well-served areas.

Further, broadband service will be an issue of quality of life for those who need access to on-line medical services, monitoring and information.

Additionally, access to broadband service is a necessity for economic growth and development in rural areas, as well as potential employees to research, train and apply for jobs.

Sincerely,

Jean Anne Grunloh  
ECIDC Executive Director



February 14, 2014

To Whom It May Concern,

The Sullivan Chamber & Economic Development supports the wireless broadband internet program conducted by Coles-Moultrie Electric Cooperative to bring affordable high speed internet service to unserved or underserved areas within the counties of Coles, Moultrie, Cumberland, Douglas, Clark, Edgar Piatt and Shelby in central Illinois.

Access to affordable high speed internet service is a critical need for students to be able to download information and assignments, or otherwise have the same opportunities for education as their peers who live in well-served areas. Children at the Sullivan PreSchool as well as clients of the Mid-Illinois Senior Services all have access to computers and need reliable internet service to aid in their continued education and computer proficiency. The Sullivan School District has also recently started new procedures where students receive their assignments and must submit their homework to teachers via email, thereby making the need for affordable reliable internet a necessity.

Further, broadband service will be an issue of quality of life for those who need access to on-line medical services, monitoring and information. With three medical clinics in town representing three hospitals as well as doctors for chiropractic, dental and vision, the need for fast reliable internet service in Sullivan is crucial.

Additionally, access to broadband service is a necessity for economic growth and development in rural areas, as well as potential employees to research, train and apply for jobs. Our local businesses and hopefully the businesses we will attract to our community depend on reliable internet for daily function. Our society has become so dependent on internet, that when it is slow or unavailable, we don't know how to be productive.

The SCED is not only supportive of Coles-Moultrie's willingness to expand wireless internet access, but we are grateful for their investment in infrastructure for our community.

Sincerely,



Stepheny McMahon, PCED  
Executive Director